

## Claims

- Sub B1
- [c1] A connector assembly for a circuit board comprising:  
a back shell having guide channels therein; and  
a housing having guide arms extending therefrom, said guide arms sized to be receive within said guide channel to align the back shell and housing during assembly.
- [c2] A connector assembly as recited in claim 1 wherein said back shell comprises retraction feature disposed thereon.
- [c3] A connector assembly as recited in claim 2 wherein said retraction feature is integrally molded with said back shell.
- [c4] A connector assembly as recited in claim 2 wherein said retraction feature comprises a partial cup shape.
- [c5] A connector assembly as recited in claim 1 further comprising a first carrier board fixedly coupled to the circuit board, a second carrier board fixedly coupled to the circuit board.
- [c6] A connector assembly as recited in claim 5 further comprising a third carrier board and a fourth carrier board fixedly coupled to the back shell.
- [c7] A connector assembly as recited in claim 6 wherein said third carrier board is coupled to a flex circuit.
- [c8] A connector assembly as recited in claim 6 further comprising a first interposer electrically coupling said first carrier board and said third carrier board, and a second interposer electrically coupling said second carrier board and said fourth carrier board.
- [c9] A connector assembly as recited in claim 8 wherein said first carrier board, said second carrier board, said third carrier board, said fourth carrier board, said first interposer and said second interposer are positioned within said housing when assembled.
- [c10] A connector assembly as recited in claim 9 wherein said back shell forms a dust

shield.

B  
[c11]

A connector assembly as recited in claim 8 wherein said housing comprises ribs therein, said ribs aligning said first interposer and said second interposer therein

Sub 91  
[c12]

A connector assembly as recited in claim 6 further comprising a retainer body positioned adjacent to the first carrier board and said second carrier board, said retainer including a first snap engaging said first substrate and a second snap feature engaging said second substrate to retain said retainer body between said first carrier board and said second carrier board.

Sub 91  
[c13]

A connector assembly as recited in claim 12 further comprising a fastener coupling said retainer to said housing.

[c14]

A connector assembly as recited in claim 6 wherein said first carrier board, said second carrier board, said third carrier board, and said fourth carrier board comprise alignment slots, said housing having alignment guides positioned on a lateral side, said alignment guides sized to be received within said alignment guides.

Sub 92  
[c15]

A connector assembly as recited in claim 1 wherein said guide channel comprises a snap and said guide arms comprise a snap opening sized to receive a connector snap.

Sub 91  
[c16]

A connector assembly as recited in claim 1 wherein said back shell comprises alignment openings adjacent to said guide arms and wherein said back shell comprises alignment keys, said alignment openings sized to receive said alignment keys.

[c17]

A connector assembly for a circuit board comprising:  
a first back shell and a second back shell, said first back shell and said second back shell having guide channels and retraction features therein;  
a housing having guide arms extending therefrom, said guide arms sized to be receive within said guide channels;  
a first carrier board fixedly coupled to the circuit board, a second carrier board

fixedly coupled to the circuit board; and  
a third carrier board and a fourth carrier board fixedly coupled respectively to  
said first back shell and said second back shell.

[c18] A connector assembly as recited in claim 17 further comprising a first  
interposer electrically coupling said first carrier board and said third carrier  
board, and a second interposer electrically coupling said second carrier board  
and said fourth carrier board.

[c19] An imaging system comprising:  
a detector having a back shell having guide channels therein; and  
a data acquisition system comprising:  
a circuit board; and  
a housing coupled to said circuit board, housing sized to receive said back  
shell, said housing having guide arms extending therefrom, said guide arms  
sized to be receive within said guide channel.

[c20] An imaging system as recited in claim 19 wherein said housing is coupled to  
said circuit board through a retainer that is positioned between a first carrier  
board fixedly coupled to said circuit board and a second carrier board fixedly  
coupled to said circuit board.

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